Regular Edition

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British Trade Supplement

The Publishers of **"The Canadian Architect and Builder"** have arranged to furnish information respecting British Exporters of Building Materials and their goods advertised in this paper, and will keep on file at their offices, Board of Trade Building, Montreal, Confederation Life Building, Toronto, and 720-721 Union Bank Building, Winnipeg, **Catalogues, Price Lists, Etc.**

Catalogues will be forwarded to Architects and Building Supply Houses in Canada on application.

Directory of Leading Stone and Granite Dealers

NOTES.

A new cement plant is being constructed on the eastern slope of the Rockies, near Kananaskis, Alberta, at a cost of $200,000.

A marble business has been commenced in Edmonton, Alta., by Bertrim and Armstrong.

According to a bulletin issued by the United States Geological Survey at Washington, D. C., the production of Portland cement in 1905 amounted to 35,246,812 barrels, valued at $33,245,867, which represents a gain of 8,740,931 barrels in quantity and $9,890,748 in value over 1904.

The New England Adamant Company, of Hopewell Hill, N. B., have now the Stile quarry in full operation, and are hauling two car loads of plaster a day over the S. & H. Railway to point of shipment at the Shepody River.

The Canadian Architect and Builder

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VOL XIX.—NO. 223. JULY, 1906.

ILLUSTRATIONS ON SHEETS.

Rectory for the Church of the Holy Trinity, Winnipeg—Messrs. Darling, Pearson & Over, Architects, Winnipeg.
Bank of Toronto, Branch on Yonge Street, Toronto.—Mr. E. J. Lennox, Architect, Toronto.
Federal Life Building, Hamilton. Views of Progress in Construction.
Houses of Small Cost for a Country Town.—No. v. Designed by Mr. W. L. Somerville, Toronto.

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Mr. Norman Shaw V. Shopkeepers.

Regent street Quadrant is to be rebuilt and the owner who happens to be the Crown has had a design for the whole Quadrant prepared by Mr. Norman Shaw, which design is obligatory upon the lessees. The shopkeepers have raised the objection that the new fronts would be unsuitable "from a trading point of view." The special subject of complaint is the stone columns which carry the front and give the substantial basis Mr. Shaw has aimed at for the upper structure. The objections made by the shopkeepers are: First, that the columns break the continuity of the building line so that a single occupier of several shops could not have the continuous window he thinks necessary; and, secondly, the glass would be set back, (behind the columns), so that a person passing along the street could not look into a window until he was abreast of it. These are the two standard objections to anything but a continuous sheet of glass. There is already evidence on the other side in England; but the Quadrant will be a test case, for Mr. Shaw stands firm on the ground that his design has been approved by the Government. He says further that he has made the windows wider than they were before—17 ft. instead of 14 ft.—so that there is a good deal of room for display. The question is whether the goods in a window would not look better in an architectural frame. It is rather a question of an attractive display than a comprehensive one. Everything cannot be shown in the window. It is a question of a suggestive invitation, and an appearance of reserve always adds to the suggestion. The better class of English shops are already aware of this; "everything in the window" is not a style of business that appeals to the best purchasers. If the Quadrant design is carried out unchanged, and, as is likely, does not change the charac-

ter of the place as a shopping centre, there will be a decided impetus given to the progress of the more architectonic shop-front.

The Toronto Civic Investigation.

The County Judge's investigation into the conduct of building operations for the city of Toronto has resulted in a report implicating certain contractors and architects and an alderman in conspiracy to defraud the city. The Mayor at once forwarded a copy of this finding to the County Crown Attorney instructing him to proceed against the persons named in the judgment as being guilty of corruption, and trials are at present in progress.

Much as we may regret the occurrence of such operations, that this inevitable recognition by the law should be prompt and decisive is the best thing that can happen now to prevent the further growth of this evil.

Master Painters in Convention.

The Convention of the Master Painters' and Decorators' Association of Canada is being held as we go to press, in Windsor, Ont., on July 24th. Besides a Question Drawer there are seven practical papers announced as follows :—

1. Paper, "The Master Painter as a Business Man," by George Metcalf, of Hamilton.
2. "The Apprenticeship Question," by J. M. Faircloth, Toronto.
3. Paper, "Blistering and Chalking of Paint; Their Causes and Remedy,' by T. McMahon, of Kingston.
4. Paper, "The Master Painter as an Educator of Original Decoration," by H. R. Reynolds, of Guelph.
5. Lead tests by members of Hamilton Association.
6. Paper, "The Paint Shop, Its Plant, Its Cost and How to Care for It," by Robert Simpson, of Sarnia.
7. Paper, "The Local Association, Its Advantages to the Individual Master Painter," by James Phinnemore, Toronto.

We have seen the papers read at a previous Convention. They were good. Two of them were reprinted in this journal. There are other authors this time, and it will be observed that they come, for seven papers, from six different towns. There is no local monopoly of the production. The whole country seems to share the talent—or energy or *esprit de corps* —whatever it is. *What it is* is a question which might well form the one and only question in a question-drawer for the Architectural Associations, for whose Conventions, the production of papers is always a difficulty. Architects are busy men and their want of time is genuine. But what about the painters? They are not our leisure class. And time is so adaptable; the time required for what one does not want to do, compared with that required for what one does, is as ten to one. It is evidently a great saver of time to do things with a will. But that conclusion does not help us. It seems only to strengthen the evidence that architects do not prepare papers willingly, and the question is still—why? Yet our lady clients are right; architecture is 'such an interesting profession'. It is also full of difficulties. One would think that every man in it would want to talk to other members of the profession about something and hold them to his subject. Here then is his chance to have the talk all his own way without anyone having the right to call him a bore. He will be much clearer in his ideas for putting them together in a paper and will learn a good deal when he reads it.

Stanford White.

The criticisms of Stanford White's work, that have been published, explain the adaptations of old work which were so frequent in the work of McKim, Mead and White. Mr. White was responsible for them. He is said by his friends to have been rather a painter than a architect. This account of him suggests a process of mind that would account for the disappointing character of much of his work which one cannot but nevertheless admire for its beauty. A painter's work however original is based on studies from nature. His virtue consists in truth to nature. His effects must all be found somewhere in nature. He merely points out the beauties of nature to the unobservant. And as the scenery of the world is the painter's study book, so was the world's architecture a study book for Stanford White. The architectural process does not appear to have occupied his mind so much as the results. In other words he had, as is said, a painter's mind, rather than an architect's. A comparative estimate of painters and architects in the scale of merit would be difficult; they are not in the same category when there is a distinction drawn between them. But when the painter carries his painter's mind into the other profession, inferior rank is inevitable. To associate, as has been done, Stanford White with H. H. Richardson, as workmen of the same class, is absurd. It seems true, however, that White has had the greater influence. The influence of Richardson is in fact yet to come. His work is there, and the study of it by those are ripe for it will not produce—has not produced—Richardsonian Romanesque; but it will produce architecture. In the mean time it is very likely that a strong influence in the direction of this ripening has been that of Stanford White. His adaptations of the good things of other lands and generations—copies that have lost nothing from his handling —have done much to improve the taste of his day, and to give credit to scholarship among a people who might easily have turned to excesses of crudeness in the pursuit of another idea. To see the gulph that was between the architecture of New York and the architecture of Italy or Spain leaped over all at once, and beauties both foreign and ancient planted down unchanged and looking very much at home, was, for the public, more than an education, it was an impulse. The American Romanesque and Americanism generally was about then given up in favour of tradition—including their own tradition of the Colonial style, which was also a favourite motive with McKim, Mead and White—and there is no doubt that Stanford White's pictorial exercises with bricks and mortar (and marble) is rightly looked upon as a principal if not *the* principal cause of this diversion of aim, and he may be classed as one of the educators of the nation—an influence in the progress of architecture in America towards that original excellence which he did not aim at himself.

A TALK ON CEMENT.*

SECOND PART—TESTING.

The unpleasant feature in the use of cement is the necessity of testing and the imperfection of the methods of testing. A perfect method, Mr. Gillespie says, has yet to be devised; and a uniform method—or rather a method which with uniform material will give uniform results in the hands of all experienced operators—has also yet to be invented. It is, however, possible for the general user to employ a few simple tests that will sufficiently for his purpose discover a good cement, and expose the pernicious qualites of a bad one. The usual tests are six :—fineness of grinding, specific gravity, tensile strength (neat and with sand), the hot test, and the time of setting.

Fineness of grinding is not a sure indication of the value of a cement, although all cements are improved by grinding. Fine grinding decreases the tensile strength of neat cement, but it increases the strength of mortar; and as cement in practice is always used in combination, fineness of grinding is a first consideration. It is measured by sifting a given quantity through sieves of various sized mesh, usually fifty, one hundred and two hundred to the lineal inch. The residue left on the sieves, expressed as a percentage of the original weight, classifies in the scale of fineness the cement tested.

The specific gravity test is considered to be a means of detecting under-burning, over-burning or adulteration. Specific gravity is the relation borne by the weight of a body to the weight of an equal volume of a certain specific body which is taken as the standard of comparison. That specific body is water. Water—besides the fact that it is always procurable—has two other qualities which fit it for the purpose :—first, a given volume of water always weighs the same at the same temperature; secondly, it is easy to compare other bodies with it, volume for volume, by simply measuring the amount of water they displace when immersed in it. In testing cement—since water acts upon cement—it is necessary to use some other liquid —usually kerosene or turpentine—for the purpose of measuring volume, but, when the volume is ascertained it is still the weight of an equal volume of water to which reference is made as the standard of comparison. The operation is performed with a glass vessel of tube-like shape; there is more than one form, but the essential feature is a scale of volumes, (usually of cubic centimeters), marked on the glass, so that a rise in the liquid within can be accurately measured off. The vessel is then filled with kerosene or turpentine up to the lowest mark on the scale; a weighed quantity of cement powder is introduced, (carefully, to avoid air-bubbles), and the amount the liquid rises on the scale marks the volume of the cement powder. The weight of the cement powder divided by the weight of a volume of water equal to the volume of liquid displaced is the specific gravity of that cement. The test lies in the comparison of this specific gravity with that of good Portland cement. An overburned fused clinker will give a heavy cement while an underburned one is likely to be light. Adulterants being usually of less density than cements, their presence will reduce the specific gravity. In order that the volume of liquid may be invariable during the operation care must be taken to prevent draughts of either hot or cold air. Care must also be taken to prevent reduction of volume by evaporation —either from a too lengthy exposure or from the use of a too volatile liquid.

To make the tensile test the cement is made into a stiff batter and placed in briquette moulds of a least cross-section of one inch. After setting for twenty-four hours in moist air, the briquettes are removed from the moulds and placed in water for varying periods. These periods are usually three days, seven days, twenty-eight days, and three, six or twelve months. At the end of the interval desired they are broken in some kind of testing machine. The point of carrying on the test over these long periods is that over-limed or under-burned cement shows a dropping off in ultimate strength after a time, while the strength of good cement increases with age. A test occupying a year is therefore desirable to establish the character of a brand of cement. For ordinary work a shorter test is made, and the briquettes are usually made of cement and sand in proportion of one to three. The tensile test is used, (though in practice cement is not much subjected to tensile strain), because it is more easily applied, (requiring less force), than a test by compression. The relation of tensile strength to compressive is sufficiently constant, (being from one-seventh to one-tenth), to make it possible from a tensile test to calculate properly for compressive strength. This valuable test unfortunately requires a machine, but it is possible to procure a spring balance testing machine for from 60 to 80 dollars.

The hot test is also a valuable test and can be applied more easily. This is a test for "soundness." It is also called a test for "constancy of volume." If any matter, that is to say, is present which will cause disintegration or unsoundness in a pat of cement, it will operate by altering the constancy of its volume. The usual cause of unsoundness is excess of lime. In the course of time the cement disintegrates, usually from expansion. But, as one cannot await the course of time for a test, the hot test has been devised as a means of accelerating the operation of disintegrating forces. It consists in exposing the test pats of cement for some time to the action of moist air above a hot bath, (about the temperature of which there is some variety of opinion), and then lowering them into the bath for another period. Mr. Gillespie's bath, for testing Ontario cements, was kept at 120° F. He suspended his pats in the vapour of this bath for six hours and put them into the bath for the remaining eighteen of the twenty four hours. This is a test that might be easily applied by cement users, and for ordinary purposes makes a good test. If after it the cement gives a ringing sound and has not expanded or warped it will do. Otherwise further testing must be procured.

The time of setting is tested at two stages—initial and final—by means of two "needles," as they are called, or fine steel rods weighted with balls attached to the middle of the shaft. One measures one twelfth of an inch in diameter and is weighted with a quarter of a pound; the other measures one twenty fourth of an inch in diameter and is weighted with a pound. The time of initial set is defined as the interval elapsing from the addition of water to the cement until

* Based on a paper on The Cement Industry of Ontario by Mr. P. Gillespie in the Report of The Bureau of Mines of Ontario; Vol. XIV., Part 1.

the pat thus formed will support the larger needle weighted with the lighter weight. The final set is from the addition of water until the pat will support the smaller needle and heavier weight. Support implies a surface unmarked by the needle. A minimum of water should be used ; just enough to cause a gloss to appear on the surface of the batter.

The STANDARD SPECIFICATIONS of the CANADIAN SOCIETY OF CIVIL ENGINEERS are as follows :—

The whole of the cement is to be well-burned pure Portland cement, of the best quality, free from free-lime, slag, dust or other foreign material.

(1) *Fineness:* The cement shall be ground so fine that residue on a sieve of 10,000 meshes to the square inch shall not exceed 10 per cent. of the whole by weight, and the whole of the cement shall pass a sieve of 2,500 meshes to the square inch.

(2) *Specific Gravity:* The specific gravity of the cement shall be at least 3.09, and shall not exceed 3.25 for fresh cement ; the term "fresh" being understood to apply to such cements as are not more than two months old.

(3) *Tests:* The cement shall be subjected to the following tests :

(a) Blowing Test : Mortar tests of neat cement, thoroughly worked, shall be trowelled upon carefully cleaned 5-inch by 2½-inch ground glass plates. The pats shall be about ½-inch thick in the centre, and worked off to sharp edges at the four sides. They shall be covered with a damp cloth and allowed to remain in the air until set, after which they shall be placed in vapor in a tank, in which the water is heated to a temperature of 130° F. After remainiag in the vapor six hours, including the time of setting in air, they shall be immersed in the hot water and allowed to remain there for eighteen hours. After removal from the water the samples shall not be curled up, shall not have fine hair cracks, nor large expansion cracks, nor shall they be distorted. If separated from the glass, the samples shall break with a sharp, crisp ring.

(b) Tensile Test, Neat Cement : Briquettes made of neat cement, mixed with about 20 per cent. of water by weight, after remaining one day in air, in a moist atmosphere, shall be immersed in water, and shall be capable of sustaining a tensile stress of 250 lb. per square inch, after submersion for two days ; 400 lb. per square inch after submersion for six days ; 500 lb. per square inch after submersion for 27 days. The tensile test shall be considered as the average of the strength of five briquettes, and any cement showing a decrease in tensile strength on or before the twenty-eighth day shall be rejected.

Sand and Cement : The sand for standard tests shall be clean quartz, crushed so that the whole shall pass through a sieve of 400 meshes per square inch, but shall be retained on a sieve of 900 meshes per square inch. The sand and cement shall be thoroughly mixed dry, and then about 10 per cent. of their weight of water shall be added, when the briquettes are to be formed in suitable moulds. After remaining in a damp chamber for 24 hours, the briquettes shall be immersed in water, and briquettes made in the proportion of one of cement to three of sand by weight, shall bear a tensile stress of 125 lb. per square inch after submersion for six days, and 200 lb. per square inch after submersion for 28 days. Sand and cement briquettes shall not show a decrease in tensile strength at the end of 28 days or subsequently.

(4) The manufacturers shall if required, supply chemical analyses of the cement.

(5) *Packing:* The cement shall be packed either in stout air and water-tight casks, carefully lined with strong brown paper, or in strong air and water-tights bags.

(6) The manufacturer shall give a certificate with each shipment of cement, statiug (1) the date of manufacture ; (2) the tests and analyses which have been obtained for the cement in queston at the manufacturer's laboratory ; (3) that the cement does not contain any adulteration.

If a young man does not aim at a far higher mark than he will reach, he will stop short at a far lower mark than he might reach. The higher the idea the higher the achievement. Men do not accomplish everything which they believe they can do, but they certainly do nothing unless they believe they can do it.

BOOKS.

ARCHITECTURAL HARDWOOD FINISHING. A PRACTICAL TREATISE ON MODERN METHODS OF FINISHING THE WOODWORK OF NEW BUILDINGS. BY GEORGE WHIGELT. THE PAINTERS MAGAZINE, 100 WILLIAM STREET, NEW YORK. $1.00. The fifteen articles of which this book is made up were originally published in THE PAINTERS MAGAZINE. The author is a practical mechanic who writes from experience and describes the working processes for preparing the woods and obtaining the different finishes.

BRAYTON STANDARDS. A POCKET COMPANION FOR THE UNIFORM DESIGN OF REINFORCED CONCRETE BY LOUIS F. BRAYTON, CONSULTING ENGINEER, MINNEAPOLIS. $3.00. The strength of the various members in a reinforced concrete structure can now be as safely calculated as in a structure of wood or stone. The design is usually left to the contractor with the result that there is no equality of conditions for competitive tendering, nor the same freedom in the choice of method of construction. BRAYTON'S STANDARDS aims at furnishing for designers of reinforced concrete the same kind of information that is supplied by the Carnegie Handbook for designers in structural steel. Enough of the theory of reinforced concrete is given to satisfy those familiar with the subject that the principles lnvolved are correct; further than this it omits the theory and gives only the information desired by designers.

THE ESTIMATOR'S PRICE BOOK AND POCKET COMPANION. BY I. P. HICKS. DAVID WILLIAMS COMPANY, 14-16 PARK PLACE, NEW YORK. $1.00. The prices given are average American prices which, (much lower than the inflated prices of Toronto), seem to compare very well with average prices elsewhere in this province. The book is prepared for corrections and additions to the price lists, by blank pages columned and headed for dimensions and prices ; the intention being that builders should make it their pocket companion and guide. For this purpose there are some tables of general information necessary for making the calculations upon which an estimate is based.

CLASS ILLUSTRATIONS FOR THE STUDY OF ARCHITECTURA L HISTORY, BY BANISTER F. FLETCHER, F.R.I.B.A. B. T. BATSFORD, 94 HIGH HOLBORN, LONDON. The case, we have received, of reprints in sheet form of the well known illustrations of Mr. Banister F. Fletcher's History of Architecture, is of the small size, the same as in the History. The subject matter is divided into four sections: 1 Classic styles, 90 plates; 2 Mediæval styles, 102 plates; 3 Renaissance and Modern styles, 75 plates; 4 Non-Historical Architecture, 36 plates. In this size each of the first three sets costs four shillings, and the fourth one shilling and sixpence. These drawings—or a comprehensive set of 168 of them—are also reproduced on a large scale, measuring 40 inches by 27 inches, (the size of the original drawings), and are printed on double elephant paper for use as wall diagrams for lectures. From the method, employed by the author, of grouping illustrations together on a page, the 168 sheets contain some 2,000 illustrations. The price of a set is £60 unmounted, £70 mounted on paper, and £80 mounted on paper with a green silk edging. A series of not less than ten diagrams may be purchased, in any of the above styles of finish, for 8s, 9s or 10s, each drawing, according to the finish.

OUR ILLUSTRATIONS.

BANK OF TORONTO; BRANCH ON YONGE STREET, TORONTO. MR. E. J. LENNOX, ARCHITECT, TORONTO.

The corner of Queen and Yonge streets, which was not long ago above the business belt of Toronto has now, since the establishment of the City Hall in that neighbourhood and the growth of the departmental stores which have clustered there, become a conspicuous business centre. This is the second branch bank, with a substanial character of design, that has been built near that corner during the last year.

The building shown in our illustration has now reached the pediment. It is constructed of cut stone throughout: of the light colour, (Indiana limestone), which alone seems appropiate to a classic design.

As we shall doubtless publish a photographic view, later on, it will be interesting to our readers to have this elevation with which to compare the perspective effect, showing the dome in retreat and the facade terminating with the acroteria of the attic.

The proportion of parts, measurable upon the elevation, will be found to exceed somewhat the classical proportion in weight.

RECTORY OF THE CHURCH OF THE HOLY TRINITY, WINNIPEG. MESSRS. DARLING, PEARSON AND OVER, ARCHITECTS, WINNIPEG.

The obvious excellence of this house requires no comment. It is a good example of an exterior arising from the plan, and producing a true architectural effect by material and arrangement only. It should be observed that material is not stinted in the chimney, and much of the effect is due to its mass—rising full size to the top. The success of this chimney does not however constitute a recipe for chimney design. It suits the particular case of the square-edged, square-topped fire-place bay. If we are to extract a moral from it, the moral might be that the success of simplicity lies in the perception of character in a design and a feeling for harmony with it, in all details.

THE FEDERAL LIFE BUILDING, HAMILTON, ONT., MESSRS. FINLEY AND SPENCE, ARCHITECTS, MONTREAL.

We have already published, in our number for May, the architects' perspective drawing of this building.

Our present illustrations, from the photographic records of the Canadian White Company who are doing the work, show the progress of about two months; from the completion of the steel frame to the completion—or near completion—of the exterior casing, accompanied, of course, by interior work of different kinds.

HOUSES OF SMALL COST FOR A COUNTRY TOWN—NO. IV DESIGN BY MR. W. L. SOMERVILLE, TORONTO.

The point of doubtful applicability in this design is the style. It has not a native look, and would not be well carried out by native workmen proceeding according to their usual methods. But the plan is in the main good—decidedly good. The point in which it would be the better for change—the excess of openings—is precisely that which will disturb the exterior effect as now designed. So we may treat the plan and leave the elevation to come out altered accordingly. It would be well, however, to make this one definite effort at its composition—that the front and back gables be brought down to a position of subordination below the main ridge. The simplest way to do this is to raise the ridge. The bedrooms would thus acquire another foot or so of head-room for which they would be the better, and the additional cost would be small. But the alcove window might also be reduced both in height and width, and this gable would come down in height accordingly.

In other respects the windows of the upper floor are satisfactorily planned both for outside effect and inside comfort. That each bedroom has two windows, with different aspects, is an excellent thing for air in winter as well as in summer.

On the ground floor, however, just half the number of sashes would be about right. We can drop them out and raise our roof out of the saving.

Two sashes on the east wall of the livlng-room and one on the south would be more comfortable to live with, and would give some much needed wall space to that room—for which end the door to the kitchen might be closed up too. One sash on the south wall and the glass door is all the dining room needs. The hall and staircase, (a very nice arrangement), have evidently an open-work screen between and do not need such copious light on each side of it. The effect would probably be most interesting with most light on the staircase side, and this might come from a good sized window on the landing over the kitchen entry. A small hall window also, chiefly to fulfil a decorative function, would be necessary.

All these alterations would work well in elevation and the result would be a very good house to fit our problem.

ILLUMINATION OF A RESIDENCE.

By Ernest C. White, M. E.

The application of scientific or engineering principles to house lighting, when practiced at all, is commonly confined to the selection of more or less efficient light sources and accessories after their location has been permanently determined. The locating of outlets by the rules of symmetry along, is properly subject to ridicule as a means towards efficient illumination of the home. In many causes this locating is left to some more or less experienced, but irresponsible workman

The design selected for description is that of illumination by electric light of a residence 54 x 63 ft., three stories and basement, and costing about $30,000. It may be said in passing that the same principles have been applied to the design of lighting for many houses costing only $5,000 with equal economy and effect Limitations of space will not permit the publication of the complete lay-out and schedule, so it will be best to select the illumination for a small section of the first floor for more complete analysis and description, and to indicate in general the equipment for the balance of the house together with the reasons for its adoption.

Fig. 1. is a corner of the first floor plan showing the reception and dining room, each of which is entered from a large main hall in the center of the house. An extract from the schedule including the items pertaining to the lights shown in this plan, is given below. Some of the sketches referred to in the schedule are reproduced in Fig. 2. The purpose of these sketches is to indicate the essential dimensions and general character of fixtures, as well as the directions in which the sockets should point to give the best results. They

*Engineering of Illumination, Aikins Building, Winnipeg.

serve as an indispensable aid to the owner in selecting the fixtures and as a guide to the workman installing them. In many cases the sketches show graphically the exact location of lights over billiard tables, near mirrors, etc.

RECEPTION ROOM.—This is in very light finish and

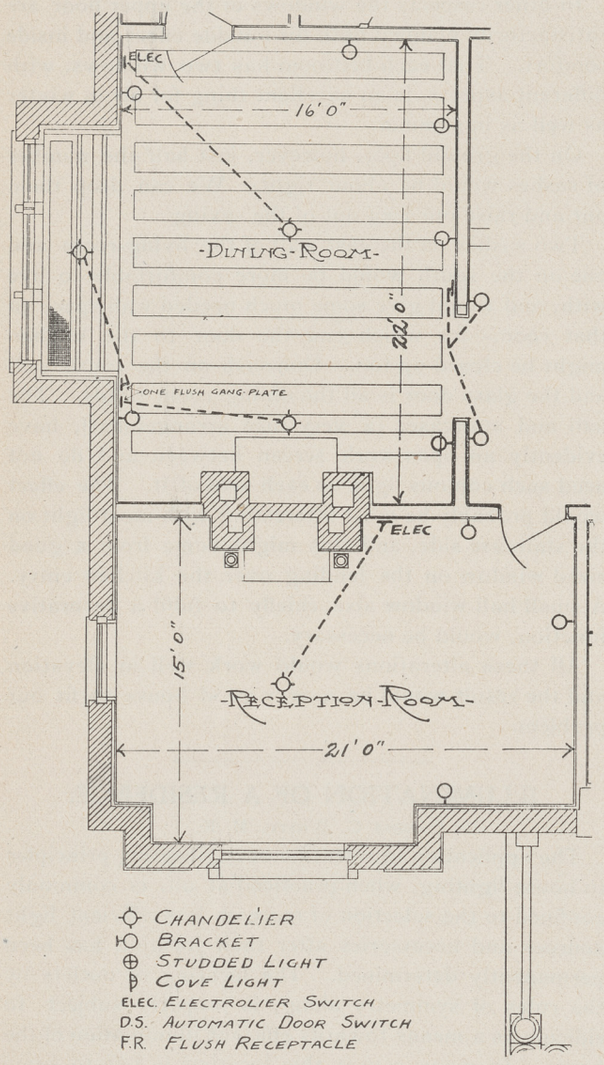


FIG. 1.

the lighting required is, for ordinary purposes, a mild general illumination and, some occasions, an effect of considerable and well-diffused brilliancy. It is of no little importance that the light shall be of a mellow tone, for the ladies cannot be left out of the problem and the appearance of the complexion is remarkably dependent upon the color of light by which it is viewed.

opposite "reception room center" and in accompanying instructions. Four of thelights point towards the corners of the room and the fifth straight down. Each of these lights is provided with a certain form of prismatic glass reflector having a very translucent yellow enamel coating. These reflectors concentrate the light on the crystals in the direction where the illumination is most needed and also produce the color required, the actual illuminating effect being about the

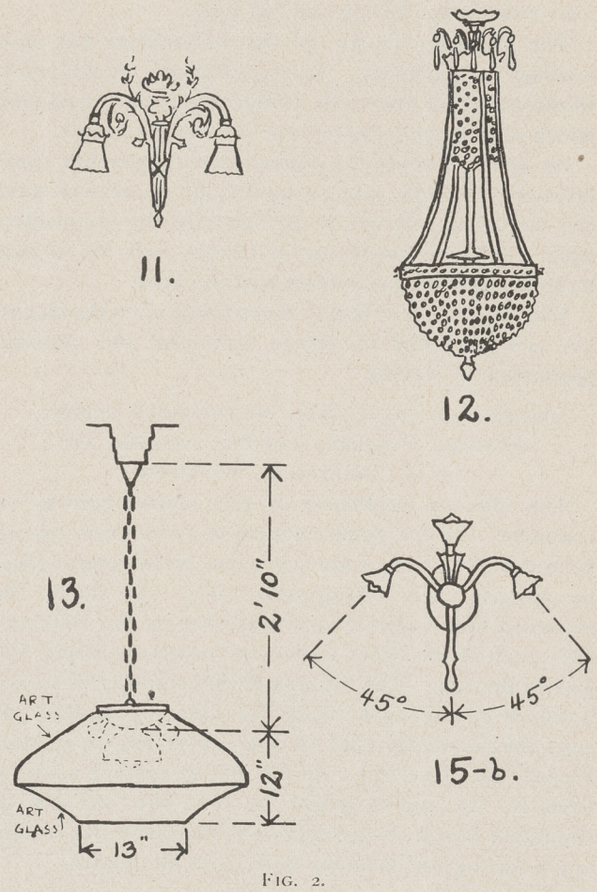


FIG. 2.

same as from a sufficient number of paraffin candles, with excellent diffusion. An electrolier switch provides means for turning on only one, four, or all of these lights as required.

For purposes of symmetry and also to avoid dark ends of the room, this chandelier is centered between the fireplace and window. three 2-light brackets are then provided to illuminate the other end of the room, two being near the entrance and the third placed to

LOCATION	No. OF FIXT.	LIGHTS PER FIXT.	HT. OF OUTLET	HT. OF SOCKET	STYLE SOCKET	CONTROL	SKETCH No.	DIAM HOLDER	REFLECTORS	LAMPS No.	LAMPS C.P.	REMARKS
RECEPTION ROOM CENTER	1	5	CEILING	8' 0"	BENJ. 15KY	ELECTROLIER	12	B#246	IE-50-ay	5	32	FROSTED (½)
" " SIDE	3	2	6' 0"	—	PULL	SHORT CHAINS	11	1½"	IE-28C-ay	6	4	FROSTED CANDELABRA STYLE A.
DINING ROOM CENTER	1	5	BEAM	7' 1"	BENJ. 15KY	ELECTROLIER	13	SPCL	P-7330	1/4	32/4	ONE REFLECTOR ONLY.
" " BRACKTS	6	3	6' 3"	—	PULL	SHORT CHAINS	15	1½"	IE-28C-ap	18	8	FROSTED CANDELABRA STYLE A.
" " WINDOW	1	1	CEILING	6' 6"	KEYLESS	ROTARY FLUSH	14	1½"	IE-62-ap	1	16	FROSTED
" " FIRE PL	1	1	BEAM	8' 0"	KEYLESS	" "	LANTERN	—	——	1	8	

The owner's preference in this case was for a crystal chandelier of some sort. This can be very well adapted to the purpose in hand, though there is perhaps no other form of fixture so easily misused. Sketch No. 12 shows the general form of chandelier required. The balance of the equipment is indicated in the schedule

come within the vista from the center of the main hall. This gives six sources and enables the use of small candle power provided with close fitting prismatic reflectors, having a canary yellow coating, thus maintaining a uniform color and altogether avoiding any vision of high intrinsic brilliance at any point. The

sockets point straight down as indicated in sketch No. 11.

Dining Room.—This room requires a great deal of light. The walls very dark with 7 ft. panelling in mahogany, and the reflecting value of the ceiling is greatly lessened by the many beams. In fact the average coefficient of reflection cannot be assumed above 10. thus making the ratio between total and direct illumination 1.11. This applies only, however, to the general illumination, and is somewhat increased by the brillantly lighted table which has a high diffuse reflection.

The position of the table being fixed by the location of the central fixture, this is moved slightly off center towards the service and away from the fireplace and entrance. Sketch No. 13 indicates the fixture to be used and is intended to'illuminate the table very brightly, avoiding any direct light in the eyes of the diner except that which is not absorbed by the art glass shade, and at the same time keeping the fixture well above the tables. The reflector used on the 32-c. p. lamp in this position gives 3 candle feet illumination at the center of the table falling off to 2 candle feet near the edge or where the light is cut off by the enclosing shade. The four 4-c. p. lamps, arranged to be turned on subsequently or alone by the electrolier switch, are for the purpose of producing brighter illumination of the art glass when desired. It may seem to the reader that both of these purposes could have been served as well by using lamp with no reflector in the shade. In fact, however, it would require a 100 c.p. lamp to produce the same illumination on the table allowing a generous reflection from the inside of the art glass, and the result would then be less effective due to the higher relative brilliancy of the visible shade.

For the general illumination of the room it was decided to use brackets located in the upper panels of the wainscot. The number and location of these is indicated in the plan and the direction of sockets in sketch No. 15. As it is necessary to use 8-c.p. lamps to produce the illumination that would be required on some occasions, the lamps are further shaded by pink enamel coated prismatic reflectors of the form giving a good distribution as located and avoiding to a degee the useless spots of light on the panelling. The pink tint serves to accentuate the illumination of the wainscot and to prevent undue contrast. The effect is not only more agreeable, but less trying on the eyes.

A pendant light in the window equipped to thoroughly illuminate the bay, and an ornamental lantern swung from a beam opposite the breast of the chimney, complete the installation for this room.

It will be observed that while every provision has been made for supplying requisite illumination in these rooms, there is no light source of high intrinsic brilliancy placed where it can ordinarily be within the direct range of vision. It is for this reason that the illumination is visually efficient, in addition to the increased economy obtained by directing the rays where needed; in other words, the lighting is *comfortable*. The illumination in a light finished room is easily doubled by diffuse reflection. Yet with the proper accessories the illumination from the same scource may be as easily multiplied four or five times in the plane where it is of use.

But not many rooms require to be treated as problems in illumination to the same extent as those just described. It is true that the human eye has been educated by day light conditions, and yet it is by no means essential to attempt to simulate these conditions in either distribution or color if the teachings of actual physiological experiment are observed. It is well, therefore, to consider for every room whether a ground work of fairly uniform illumination is necessary, for in many cases it is not. The following outline of equipment for the more important rooms contains illustrations.

Basement, 8 ft. 9 in. to ceiling

Laundry 15 ft. x 22 ft. One 34-c.p. at ceiling with 12 in. opal reflector. one 16-c.p. drop, over near edge of tubs with, 10 in. opal reflector. One 8-c.p. with 6 in. opal reflector on bracket over sink.

Drying room 21 ft. x 13 ft. Two 32-c.p. lamps with 24 in. opal reflectors at ceiling.

Furnace room. 18 ft. x 28 ft. One 32-c.P. near ceiling in front of furnaces with opal reflector, two 16-c.p. similarly located opposite fuel room.

Man's room. 14 ft. x 15 ft. One 16-c.p. and one 8-c.p. on brackets near dresser and table with reflectors which produce a 1/8 candle foot illumination in the furthermost parts of the room.

Billiard room. 30 ft. x 15 ft. with two bays. The table is located at one end and is lighted by only two 16-c.p. lamps arranged with reflectors concentrating nearly all of the light evenly over the bed of the table. These lights are also provided with special opalescent shades cutting off direct rays beyond the edge of the table. They are also made to allow sufficient light through the top to illuminate the string and the ceiling.

At the other end opposite the fireplace is a drop fixture with a shaded 32-c.p. lamp and reflector, carried on a wireless cluster with four—4 c.p. frosted lamp outside of the shade and controlled by an electrolier switch.

Lavatories both here and on the main floor 7 ft. x 8 ft. and 8 ft x 10 ft. one 8-c.p. and one-10 c.p. respectively on brackets over wash basins.

Stairways. Two of these are each lighted by an 8-c.p. lamp studded in the ceiling over the *bottom* of the stairs with a concentrating reflector giving an average of about 1/3 candle foot on the steps without shadows. A third stairway is properly lighted by the lamp opposite one of the fuel rooms.

First floor. 10 ft. 3 in. to ceiling.

Front porch, 11 ft. x 12 ft. Hanging porch lantern with concealed reflector as near over steps as convenient and designed to effectively light the steps, porch and house number with one 16-c.p.

Verandah 46 ft. x 11 ft. Two 16-c.p. lamp hung 8 ft. above floor with reflectors giving broad downward distribution over whole verandah and fair reading intensity under each light under the ordinary conditions of dark surrounding.

Vestibule, 7 ft. x 7 ft. Cove lighting. Arranged to turn on four 8-c.p., four 16-c.p., or both. The lights are provided with aluminum reflectors concentrating most of the light evenly over the arched ceiling. This is a beautiful though expensive method of lighting and in this cause is only used to produce a comfortable transition from comparative darkness to the well-lighted interior.

Alcove. 7 ft. x 7 ft. next to vestibule. One 16 c.p. pendant in a prismatic reflector with frosted bowl beneath. This is a very useful combination.

Main hall, 18 ft. x 22 ft with open stairway in

center. This was treated as a center of travel in four directions. On either side of the entrance alcove is a bracket supporting two 16-c.p. lamps upright with refracting globes. The columns at the foot of the stairs carry a pair of brackets each supporting an upright 50 c.p. lamp in a 10 in. refracting globe. These are so located as to leave no dark corners in the hall and provide excellent illumination as far as the landing. At the opposite entrances to living and dining room are four brackets each supporting three 4-c.p. frosted bulbs upright. Two of these brackets appear in Fig. 1. The whole arrangement is designed to make convenient and agreeable the ordinary coming and going, receiving and Godspeeding, that make such a hall a center of every day interest and importance. Incidentally some pleasing vistas are produced.

Living room. 30 ft. x 16 ft. with large cased opening; treated practically as two rooms. Opposite entrance is a chandelier supporting five 16-c.p. frosted lamps in ornemental cut prismatic reflectors. One of these lights is pendant, producing good reading intensity near the center of the room. On both sides of the bay and cased opening are four ornamental brackets each carrying one 10-c.p. frosted lamp with a coated prismatic reflector. These provide comfortably distributed centres for reading or games. At the other end of the room are two corner brackets each supporting three 16-c.p. frosted lamps with coated reflectors, so located as to direct the illumination from a comfortable angle. A flush receptacle for a table lamp is also provided.

Study 15 ft. x 16 ft. This is really more of a den. Four pendant switches with 4 in. spherical 32 c. p. frosted lamps in prismatic reflectors, having a green tinted enamel coating, are used to provide a reading intensity and quality in the four corners of the room, at the same time lighting up the face of the book cases and pictures with partially corrected light giving almost day-light color values.

Breakfast Room 10 ft. x 16 ft. A short chandelier carrying four pendant 10-c.p. lamps controlled by electrolier switch. One pair is equipped with concentrating reflectors and the other two with a distributing form, all being coated and partly tinted in green.

Kitchen 16 ft. x 16 ft. One 32-c.p. partly frosted pendant 8 ft. above floor, with reflector giving strong and even illumination over entire room without eye strain, an important need in this place and one usually neglected. Over the sink is a small bracket with upright 8-c.p. frosted lamp. Unshaded it lights the adjacent shelves, from which a reflector is conveniently taken and set over the tip without holder to produce a concentrated illumination for dish washing.

Side and Rear Entrances, etc., are usually lighted with an 8-c.p. lamp placed high up with small concentrating reflectors giving a leading intensity in at least one spot and leaving an unobstructed passage way.

SECOND AND THIRD FLOORS.

Main Hall 18 ft. x 24 ft. In the center of this hall and over the open stairway is a wireless clustre pendant 6 ft. 6 in. above the second floor level. The center light is controlled by two 3-way switches independent of the rest which are used when general illumination of the upper hall and landing is required.

Bedrooms. The bedrooms average about 16 ft. x 16 ft. and are in most cases equipped with two bracketed 16 c.p. frosted dresser lights having pink tinted and coated reflectors. 4-c.p. lamps are studded in ceiling of all closets with small concentrating reflectors and automatic door switches. In general, bedroom lighting should be local. If a bedroom is to have but one light, put it at one side of the dresser. If two lights, put one on each side. If three, the above arrangement is most useful. A third light over the dressing table is also useful for hair-dressing but not necessary.

Baths. There are four baths 10 ft. x 10 ft. Each has a pair of 8-c.p. frosted lamps with close fitting prismatic reflectors placed to direct the light on the face for shaving. There is a comfortable difference between this arrangement and the strong reflection from the mirror itself when no reflectors are used. It is of interest to note that of the 175 lamps used there are 2 50-c.p., 19 32-c.p., 62 16-c.p., 23 10-c.p., 35 8-c.p., and 34 4-c.p.

It is necessary that these lamps shall be made for the actual voltage at the outlets in order to prevent considerable waste, and this voltage should be tested as soon as the service connection is made. Many of these lamps are frosted and some are "reflector frosted" i.e. the tip half of the bulb is frosted.

The installation lacks interest in one particular, namely, that no gas outlets are provided. With the arrival of well designed fixtures for inverted gas burners, such an emergency service can be installed in a manner to satisfy any taste, and if equipped with the necessary color correcting globes these lights can also be used in conjunction with electric incandescent lamps.

COUNCIL OF ARTS AND MANUFACTURES.

At the close of the courses in the industrial and liberal arts, at the Monument National Montreal, on the 13th June, the Council of Arts and Manufactures made the following awards.

ARCHITECTURAL DRAWING.

Fourth year—1st prize, Clovis Brodeur; 2nd prize, Arthur Doucet.

Third year—1st prize, Elie Nadeau; 2nd prize, A Depatie. Honorable mention, E. Viger.

Second year—1st prize, Chs. Sheffler; 2nd prize, E Belleisle. Honorable mention, E. Harvey.

First year—1st prize, F. L. Racette; 2nd prize, A Parnell. Honorable mention, J. S. Gregoire, A. Mathieu, Nathan Mendellsohn, J. C. Ewing, W. A. King.

PLUMBING.

1st. prize, G. Belisle: 2nd prize, H. Montpetit; 3rd prize, Joseph Dugal. Honorable mention, G. Marcus, N. Lacroix.

CARPENTRY.

Beyond competition—Edouard Cusson. 1st prize, Alphonse Langlois; 2nd prize Edgar Charbonneau. Honorable mention, Frs. Lapierre, Art. Lamarre, Ovila Duchesne, Theodule Fortier, Jos. Jobin, F. Bleau, Alph. Dubuc, R. Roberts, Adec Gauthier, G. F. Hobart.

STAIR BUILDING CONSTRUCTION.

1st prize, Prospect Corbeil; 2nd prize, Louis Langlois. Honorable meution, A. Delisle, F. Viger.

INTERCOMMUNICATION.

[Communications sent to this department must be addressed to the editor with the name and address of the sender attached not necessarily for publication. The editor does not hold himself responsible for the expressions or opinions of correspondents, but will, nevertheless, endeavor to secure correct replies to queries sent in. We do not guarantee answers to all queries neither do we undertake to answer questions in issue following their appearance.]

From "Painter":— In several instances where I have fastened porcelain letters on plate-glass windows, letters have fallen off, although I have used cement as recommended by several books and painters. Can you advise me why this separation takes place, and how to overcome the trouble?

ANS.—The constant separation of porcelain and metallic letters from glass is one of the chief objections to this style of advertising. It is caused mainly by the varying rate of expansion between the letters and the glass. This can be overcome by the use of a cement which possesses a slight degree of elasticity, and yet has strong adhesive powers. Such a cement

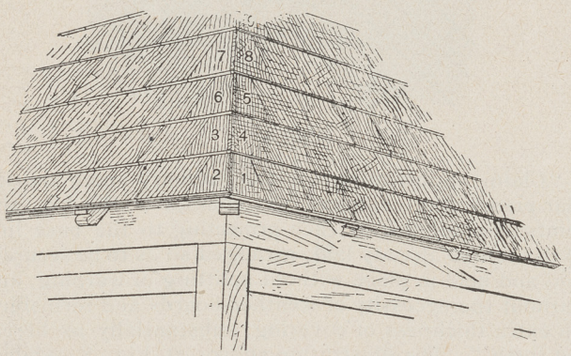
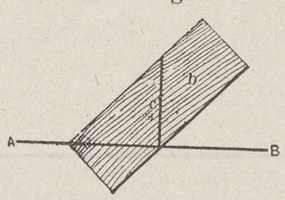


FIG. 1.

can be made as follows—Slake 15 parts of quicklime in 20 parts of water; melt 50 parts of caoutchouc and 50 parts of linseed oil varnish together, and bring the mixture to a boil. While still boiling pour the liquid on the slaked lime, little by little, with constant stirring. Filter the mixture through a piece of muslin to get rid of lumps and let cool. This cement takes a couple of days to dry, but makes a very tight and strong joint. By diluting this cement with oil of turpentine a brilliant elastic varnish is obtained that will stick to any surface.

From "Subscriber".—Will you kindly inform me how holes are drilled through plate glass and oblige?

ANS.—Take a small three-cornered saw-file and break off an inch of the end. Then grind a blunt, triangular



IG. 2.

point on it, being careful not to hurt the temper. Leave file in the handle and bore just as you would with an awl. The point of the file should not be longer than the file is thick. Use turpentine as a lubricant and keep the cutting edges on points of the file sharp with an oil stone. In boring a plate, it is best to bore from both sides, using very light pressure toward the last, always laying the plate solid on a paper-bound book.

From "British Columbia":—As you must be aware, we use in this glorious Province a vast amout of shingles for roof covering, and I would consider it a great favor—and I am sure other "British Columbians" would also —if you would give me a few pointers as to the most effective ways of shingling hips and valleys, and some patters for ornamental shingles and the names of same.

ANS:—The questions of hip and valley shingling has been discussed in this department on several previous occasions, but the subject has not yet, by any means, been exhausted nor can it be. The following illustrations and descriptive matter will, we think, pretty

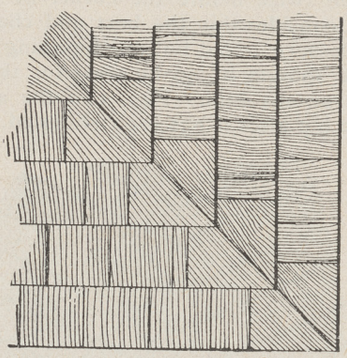


FIG. 3.

nearly meet the wants of our "British Columbian".

First Method—By inspection of the sketch Fig. 1, it will be seen that the triangular shingles forming the joint are cut in such manner that their grain runs parallel with the hip. In laying the roof carry the hip-courses up a little in advance of the other courses. Keep them about two courses ahead of the main work. Place shingle No. 1 with the edge to the hip, and to obtain its shape line across it at right angles to the eaves for the side, and parallel to the eaves for the bottom. After placing and nailing this shingle its edge must be dressed down to correspond to the face of the other side of the roof. Then No. 2 and after it

FIG. 4.

FIG. 5.

No. 3 are laid and dressed down in like manner, then 4 and 5 are laid over them and dressed dawn, continuing in this way, tunning two courses on a side at a time.

By carrying the courses up this way in pairs, it gives the shingles of the hip the appearance of each course being lapped over another, while if laid singly in this general manner, the appearance would be as though the shingles had all been laid up on side, and then those of the other lapped over upon them.

The advantage of the arrangement, I think, will be quite apparent to all practical men who will inspect the sketches. It will be seen by this alternating the courses in pairs the join ton the hip is made very complete, so far as shedding water is concerned, and that those portions of the shingles most likely to curl up when laid in the ordinary manner are thoroughly fastened. Further,

since the grain of the shingle runs parallel to the hip, the tendency to curl is taken away from the line of the hip to a point in the other side of the shingle, where it can do no harm. . .

Second method—Take a shingle and place it parallel with the hip, as indicated in Fig. 2. I then draw a line on the butt of the shingle parallel with the base of the roof A B after which draw the line C plumb with the roof. This gives the pattern ready for cutting. Commence on the hip and shingle back, then trim the points of the next shingles from the one sawed out and carry up both sides of the hip at once. The result will give joints broken twice before the corner or hip shingle goes on. I consider this the best and cheapest plan, for it is necessary to cut but one hip shingle, while the point of the shingle b can be used for the valley, if there is one on the roof. Fig. 3 of the sketches represents the hip after it has been shingled.

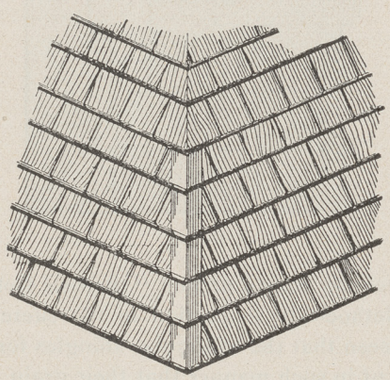


FIG. 6.

Third method : This is a novel way but good. Take strips of tin about 3 x 10 inches. Make a form out of a piece of 2 x 4, 12 inches long, and bevel one side until it forms the hip it is desired to shingle. Then cut an end to the angle of the butts, cutting out the underside at this end, leaving the thickness of the butts. Then place the tin shingle on the form even at the end and bend over the hip. Bend down and under the corners and the tin is ready for the hip. Fasten the shingles by forcing the points marked a b of Fig 4 under the butts of the shingles, and with nails at the top end as indicated in Fig. 5. There is a considerable saving of material by this method, because the waste from cutting the valley shingles may be employed in shingling the hip. The appearance of the hip after the shingling is completed is indicated in Fig. 6 of the cuts.

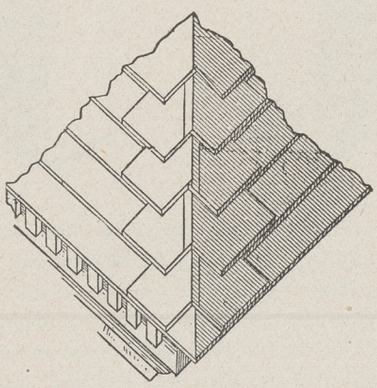


FIG. 7.

Fourth method:—At Fig. 7, is shown a method of shingling a hip that was patented in 1863. "The improvement consists in dropping the corner shingle down over its fellow course, thereby having the full strength of the shingle, and leaving the corner not liato warp or split off. The corner shingles should be of nniform width and about the same number of inches that shingles are laid to the weather. The corner of the first course should be covered with tin. For this purpose take a large sheet and quarter it for the four corners ; commence the double shingling or dropping back with the second course. Every corner shingle should be nailed with a sixpenny nail near the edge of the shingle and midway of the course, as well as with the necessary shingle nails. Overlap alternately the corner of the other side of the hip to keep the corner straight and tight ; all as will be clearly seen by the accompanying cut."

It is claimed for this process that ; The angular piece which finished the course on the edge of the hip is brought down one course below, so as to make an additional thickness at that point and afford means for a more secure attachment.

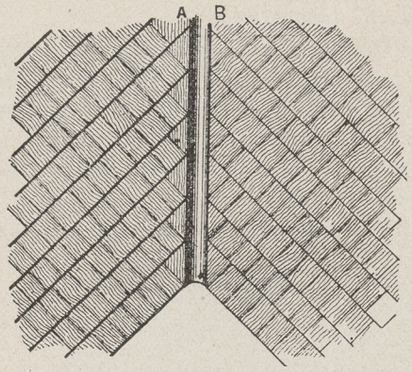


FIG. 8.

"Claim—Subsituting for the ordinary small triangular pieces that complete the courses at the hip, the joints shingles B C D each projecting to the base line of the course already laid, arranged so as to be securely laid and held in place without splitting or warping, and without the necessity of weather-boards and furnishing an extra thickness of covering, substantially as herein set forth." The illustration shown at Fig. 8 exhibits the way a valley should be shingled. Always use a continuous gutter of galvanized iron, zinc or tin, running under the shingles 8 or 10 inches at each side with soldered joints. Cut the shingles so that the grain of the wood runs in the same direction as the valley and abutting against the straight shingles laid next to the valley as shown on the side marked A and B of the

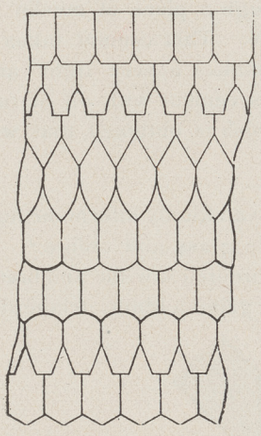


FIG. 9.

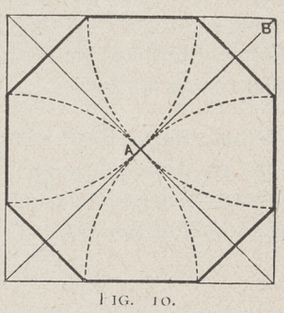


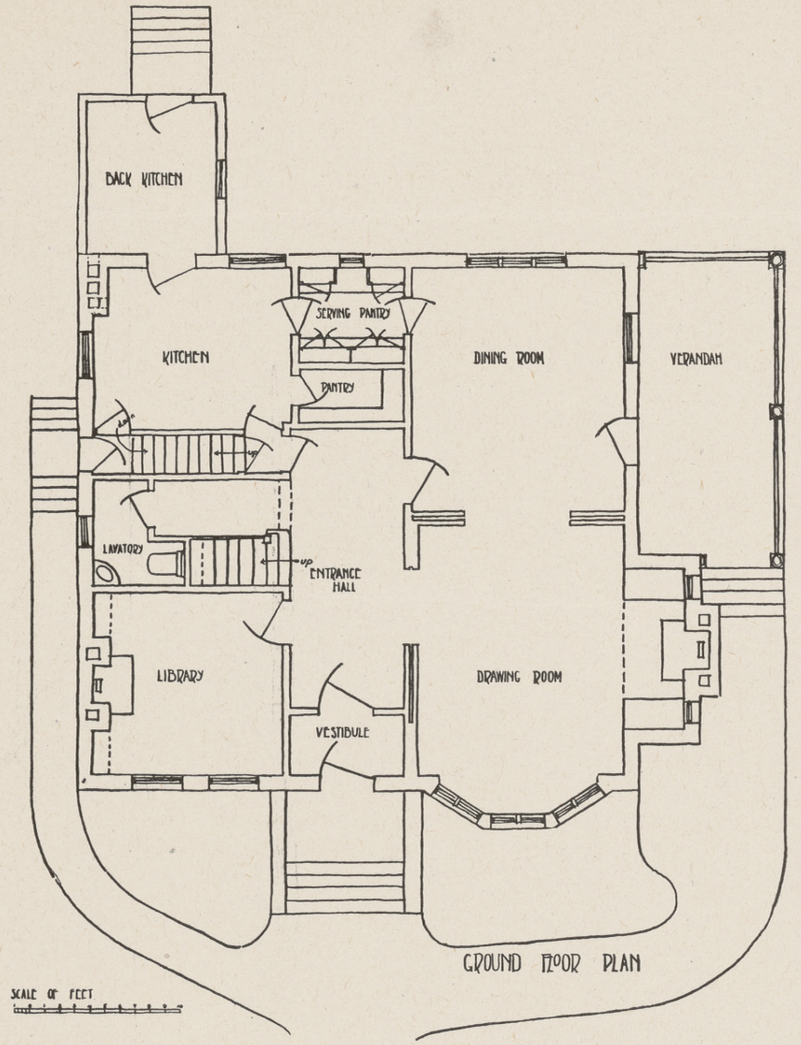
FIG. 10.

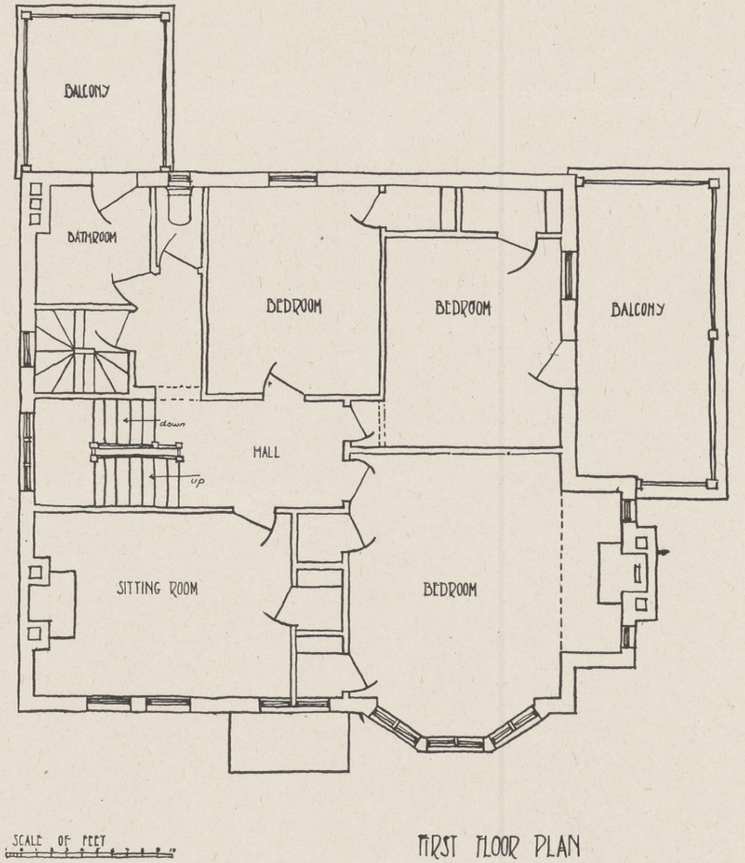
accompanying sketch. Fig 9 shows eight patterns of cut or ornamental shingles, and which are named in order of their reading, commencing with the top course, Dominion cut, concaved cut, diamond cut, spade cut, round end cut, concave hexagon cut, long Dominion cut, hexagon cut.

From "young workman"—please show a quick method of setting out an octagon.

ANS.—There are various ways of laying out an octagon, but the method shows at Fig. 10 seems to be about as easy as any and is correct. Suppose for example, the diameter is 3 ft. First get the square, then the distance from A to B from each corner and mark across. The sketch Fig. 10 so clearly indicates the method that further explanation would appear to be unnecessary.

VIEW FROM DONALD STREET.





RECTORY FOR THE CHURCH OF THE HOLY TRINITY, WINNIPEG.

MESSRS. DARLING, PEARSON & OVER, ARCHITECTS, WINNIPEG.

SUPPLEMENT TO
CANADIAN ARCHITECT AND BUILDER
JULY, 1906

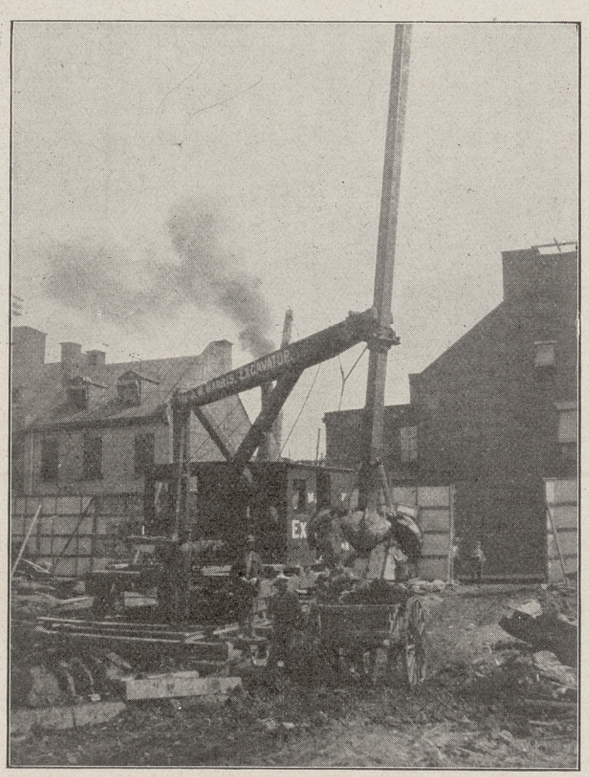
BANK OF TORONTO—BRANCH ON YONGE STREET.

MR. E. J. LENNOX, ARCHITECT, TORONTO.

MONTREAL NOTES.

One of the first ideas of the Committee on Civic Improvement was to throw out the suggestion that new and wide diagonal streets should be opened up connecting the down town and up town sections of the city by roads of easy gradient. The proposal was to start two such streets at Victoria Square, the one leading to the right and the other to the left. During some recent discussion on the applications by the Street Railway Company to have more widening of streets carried out in order to facilitate car service it was also proposed, with the same end in view, to run a diagonal street from the corner of Craig Street and St. Urban Street, extending to the corner of Sherbrooke Street and Amherst Street. This, of course, forms an alternative to the proposal of the Civic Improvement Committee. The object in view is virtually the same, and the question is whether such a diagonal thoroughfare would be better in this locality than in the other. It may be pointed out that to bring merchandise down town by a road entering Craig Street at the St. Urban Street corner would bring it directly in face of Place d'Armes Hill, a most difficult street for heavy teams or vehicles of any description to negotiate—unless indeed a street car. This objection does not lie against streets arriving in Victoria Square, from which traffic can flow by way of McGill Street to the streets nearer the river, and to the wharves themselves, with little or no trouble as regards gradient. This seems to be a very material point in favour of the Committee's suggestion. If in any of these schemes the Corporation can find a pot of gold nothing would be more welcome, for at present the demand for better street pavings becomes more urgent from day to day, and the only response seems to be that the city coffers cannot meet the demand, and its borrowing powers are strained beyond moderate limits.

At present excavations are the order of the day.



During the month of June permits for new buildings to the estimated value of $2,343,579 were granted, and, as a consequence, yawning chasms are to be seen in all directions. One of these, in particular, has been attracting a good deal of attention. This is the excavation at the corner of Craig Street and St. Urban Street, where the new building of the Montreal Light, Heat & Power Company is to be built. The attraction here is the patent digger which announces itself as the J. W. Harris excavator. This is in the form of a crane operated by steam which, instead of carrying the usual wooden box on the end of a chain, works a vertical steel beam about 30 feet long, terminating in a grasping bucket, which opens in sharp pointed quarters, and is plunged down upon the soil, of which, in closing, it takes a large bite, which is quickly swung up and round and dropped into a cart for removal. Two of these bites fills a cart, and, when work is in full swing, carts are filled at the rate of rather more than one per minute. The soft filled-in-soil at this particular excavation would seem specially favorable to the working of this appliance.

Sunday, the 24th of June, being the fête day of St. John Baptist—patron saint of the French-Canadians—was made the occasion of the unveiling of the monument erected in honour of the French-Canadian poet Octave Cremazie, who died in 1879. The monument is happily placed among the trees in St. Louis Square. Some large granite steps form a base for an upright stone on which is placed a bronze bust of the poet. Upon the stones of the base is placed a bronze figure of a man in an expiring attitude, holding in his arms a flag. Below are inscribed the words, quoted from one of Cremazie's songs, "Pour mon drapeau je viens ici mourir." Mr. Hebert is the sculptor who has executed the work. Though of small dimensions this monument is a charming piece of work, and is a more than creditable addition to the monuments of the city.

Of new buildings recently announced as in contemplation, one of the most important is the office building for the Grand Trunk Railway System, opposite their present general offices on McGill Street. It is proposed to spend about $250,000 on this building, which is to be ten storeys in height, "constructed," it is said "so that if the by-law of the City of Montreal, limiting the height of buildings, is altered at any time, additional storeys can be added." Thus cheerfully does the commercial speculator look forward to the time when by-laws—fondly believed by the humbler citizen to be salutory—shall be improved away. Enthusiasm for this kind of largeness of enterprise has carried many cities a long way up in the air; but the man in the street must pay for these things in a congested outlook and deteriorated health.

NEW BUILDINGS IN MONTREAL.

At the present time when the estimated value of buildings for which permits are being granted is surpassing all records the following particulars of some of the more important items on the list may be interesting.

Additions to Windsor Hotel, Dominion square; 110 feet 6 in. wide in front, 67 feet at the back, 244 feet deep, nine stories. Estimated cost $500,000. Architects, Hutchison & Wood. Contractors, Peter Lyall & Sons.

Offices of the Royal Bank of Canada, 143-149 St. James street; 60 feet x 100 feet, four stories high with marble front. Probable cost $300,000. Architect,

H. C. Stone. Contractor, Chas. Thackeray & Co.

Offices of the Montreal Light, Heat & Power Co., corner of Craig street and St. Urban street; 95 feet x 100 feet, seven stories, faced with Indiana limestone. Probable cost $200,000. Contractors, John Quinlan & Co.

Factory buildings for the American Tobacco Co., in St. Anthony street between Bourget and Anne streets; buildings varying from one to six stories in height in reinforced concrete. Probable cost $110,000. Architects, R. Findlay & McGregor. Contractors, Dominion Construction and Engineering Co.

Store for Mark Fisher Sons & Co., corner of Craig street and Victoria Square; 76 feet x 83 feet, ten stories. Probable cost $100,000. Architect, Alph. Piché. Contractors, Simpson & Peel.

Dominion Textile Co.'s Factory, St. Ambrose street, St. Henri; 90 feet x 112 feet, seven stories. Probable cost $50,000. Architect, David R. Brown. Contractors, The Hussey Construction Co.

The Smart Bag Co.'s Factory in Mullins street, near Dargenson street; 125 feet in front, 147 feet in rear, 75 feet deep, three stories in brick. Probable cost $50,000. Architect, H. C. Stone. Contractors, Shearer Brown & Wills.

Power House for the Montreal Street Railway Co., in Notre Dame street, near Raymond street; 295 feet x 170 feet, one storey, in brick. Probable cost $95,000. Architects, Marchand & Haskell. Contractors, the Canadian White Co., Limited.

Messrs. Munderloh & Co.'s Warehouse, Jurors street, corner of Victoria square; 56 feet in front, 33 in rear by 122 feet, four stories. Probable cost $60,000. Architects, Hutchison & Wood. Contractors, Barbeau & Dufort.

Store for Glickman & Glickman, St. Lawrence street. Probable cost $25,000. Architect, Jas. Smith. Contractors, Jos. Jacob & Co.

Auction Rooms for M. Hicks & Co., Metcalfe street, near St. Catherine street, four stories. Probable cost $20,000. Architect, J. A. Karch. Contractors, Labelle & Lessard.

Skating Rink in Guy street; 318 feet front, 332½ rear by 162 feet, four stories. Probable cost $15,000.

Factory for the Northern Electric & Manufacturing Co., Grey street, near Notre Dame street; 122 feet by 45 feet, in two stories. Architect, W. J. Carmichael. Contractors, Shearer, Brown & Wills.

Howe, McIntyre & Co., warehouse in Youville square; 58 feet x 63 feet, four stories. Probable cost $10,000. Architects, Macvicar & Heriot. Contractor, G.W.T. Nicholson.

"Linton" Apartment House, corner of Simpson street and Sherbrooke street; 150 feet x 160 feet, in ten stories of brick and Terra Cotta. Probable cost $440,000. Architects, Finley & Spence. Contractors, the Canadian White Co.

"Cavandish" Apartment House, 120 Sherbrooke street; 19 dwellings, 120 feet x 145 feet in three stories. Probable cost $80,000. Architects, Saxe & Archibald. Contractors, Shearer, Brown & Wills.

For E. Roy & Co., at the corner of Carmel avenue and Drolet street; 17 houses forming 34 dwellings; each one 17 feet x 30 feet in two stories. Probable cost $30,600.

Laboratory for the Ecole Polytechnique, St. Denis street; 96 feet x 50 feet, in three stories. Probable cost $33.000. Architect, Jos. Haynes. Contractors, Barbeau & Dufort.

School for the Catholic School Commissioners, at the corner of Richmond street and Grand Trunk street; 67 feet x 48 feet, in four stories. Probable cost $25,000. Architect, J. O. Turgeon. Contractors, O. Martineau & Son.

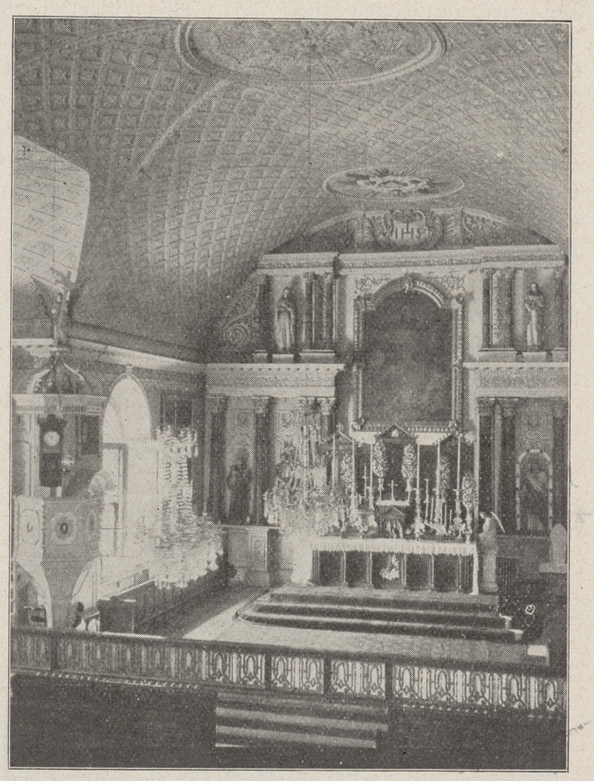
Church of the Emmanuel Congregation, Drummond street; 72 feet in front, 130 in rear by 175 feet. Probable cost $77,000. Architects, Saxe & Archibald. Contractors, Peter Lyall & Sons.

St. Thomas Church, Sherbrooke street, near De Lorimier avenue; 47 feet x 100 feet. Probable cost $18,000. Architects, Taylor, Hogle & Davis. Contractor, P. & J. O. Brunet.

Permits for all the above, besides many minor works, were issued during the month of June.

THE P.Q.A.A. SKETCHING CLUB.

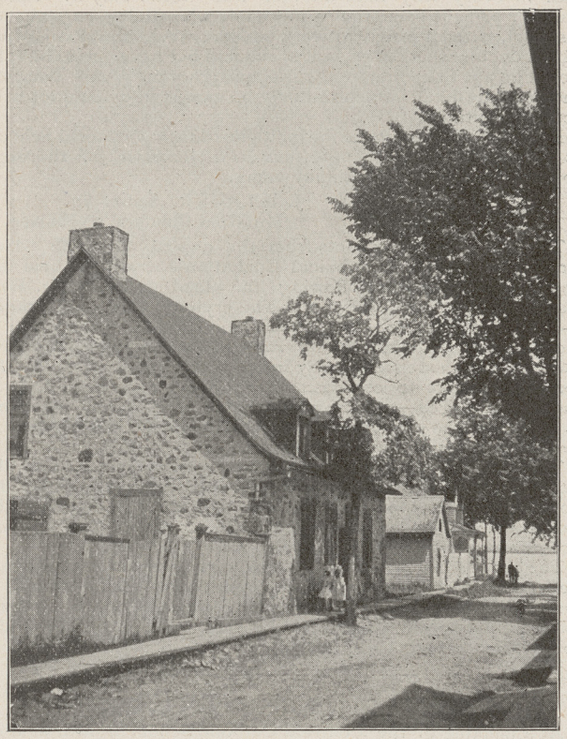
On the programme for the sketching club on the 23rd of June was a visit to Point-aux-Trembles. Unfortunately the day being very wet was not favourable for the purpose. One of the illustrations shows the interior of the old church which dates from 1705.



INTERIOR OF POINTE-AUX-TREMBLES CHURCH, P.Q.

Externally severely plain and its masonry spoiled with a coat of cement trying vainly to simulate ashlar, the interior shows considerable elaboration for a little country church. The main area as well as the little transepts have a curved wood ceiling, the top of which is flattened in each case. The paterae in the lozenge panels are carved in wood. A wood entablature with carving is carried all round the church. Corinthian columns are employed behind the main altar and beside the small altars in the transepts. The walls of choir and transepts are treated with wood panels with quaintly curved heads. The pulpit, planted upon an angle, looks well enough from a little distance but is of rather gim-crack construction. The proportions of the whole interior are very pleasing. The other

illustration represents a street in the quaint little town of Point-aux-Trembles, many of the houses in which



VIEW IN POINTE-AUX-TREMBLES VILLAGE.

are so tiny that the place would seem to be built half full size. Standing on the sidewalk one can lay ones hand on the overhanging eye brows of these miniature dwellings. The narrow streets that run down towards the river give charming glimpses of the water in the distance.

On the seventh of July members of the sketch club visited the new chapel of the Montreal College in Sherbrooke street. This building, which is being carried out by Messrs. Marchand & Haskell and not yet completed, is of imposing dimensions, being over 40 feet wide and over 140 feet long. Internally the walls, from a height of about 10 feet from the floor, are lined with a very fine yellow limestone. At each end there is on the main wall a great stilted or elliptical arch. This is backed over the altar by a great semi-dome—at the other end by a gallery running across the little narthex at the entrance. The roof of open timber is of king post construction with heavy scantlings. The details of the stone work are of a simple Romanesque character.

TRADE SCHOOLS.

MONTREAL, 16th July, 1906.

To the Editor, "CANADIAN ARCHITECT & BUILDER".

Dear Sir,—On a recent occasion you asked me for an opinion regarding the results obtained from employing workmen who had been trained in "Trade Schools", and as to whether the work of such men showed that they had a thorough training.

Your question indirectly opens up the whole question of "Technical Schools", the desirability of their establishment in all important centres, and the practical results of training received under their auspices.

In the first place it has become almost a truism to say that this is an "age of specialization". People to-day need to use their heads as well as hands; and conversely practical knowledge must go hand in hand with theory. To-day it is a struggle between nations for commercial supremacy, and that supremacy will neither be attained nor held by mere chance, but by that nation which trains its mechanics and producers in labor-saving details, prevention of waste, utilization of by-products, training

of eye and head as well as manual dexterity. To quote a prominent educator: "The days of self-made men are over. The demands of our day and generation are for men of special preparation and special ability in certain lines; and he is best made who is best trained and best equipped for the chosen calling of life."

There can then be no question about the desirability of the establishment of proper technical schools. In this connection I would refer you to my last annual report of this Exchange, wherein we stand on record as strongly urging their extension and competent endowment by each Province. An institution that will open the way for our young men to become masters of trades instead of spending their lives as day-laborers cannot but be a benediction to each Province.

"Polytechnics" as they were termed in the old country, have been in full swing for over 50 years in Britain, and have been of incalculable benefit to all classes of mechanics. In Montreal we have a school on similar lines—the "Ecole Polytechnique"—with an endowment of $15,000 per annum from the Provincial Government, for which it has to maintain classes in other centres, (Three Rivers, Sorel, St. Johns, etc.); but as only evening classes are taught, and only a limited number of subjects offered (in the building trades, only Carpentry and Stairbuilding, Freehand and Architectural Drawing, Modelling and Plumbing) it is capable of far greater usefulness and extension, with increased resources. Its teaching is *gratis* and some young men of recognized talent have been recipients of its instruction, notably Herbert, the famous sculptor .In New York, the Trades School has developed into an important institution, now taken over and supported by the State. There, the whole of a building is taught, practically and theoretically, with actual bricklaying, plastering, carpentry and plumbing; students are moreover taught to read and understand plans and drawings; and regular lectures are given daily by competent professors in the different trades. By this means a mechanic gets a wider *theoretical* knowledge of a building as a whole, in addition to his special trade, than he would as an apprentice unless under exceptional circumstances.

The concensus of opinion of some of our leading contractors in the Bnilders' Exchange confirms the following deductions: That the Technical School offers the mechanic the equivalent of his "college training", and leaves him with much the same mental and technical equipment as the doctor or lawyer who has just graduated from his college course. Neither is of much value without the practical experience which results from actual, active operation in his particular line. A mechanic who in addition to serving his apprenticeship takes up a technical course, either concurrently or subsequently, is a more valuable man in every way than another who works only by "rule of thumb". At the same time a mechanic who studied *only* at such a school, without practical work outside, would stand on a par with a doctor who had passed his course but never practised; he would be apt to be a mere theorist and ignorant of the hundred and one little details which can only be mastered by contact with actual conditions.

By all means encourage the multiplication of Technical Schools as a most valuable adjunct to, but *not a substitute for* thorough apprenticeship. Faithfully yours,

J. H LAUER, Secretary,
Montreal Builders' Exchange.

The following are extracts from the annual report to which Mr. Lauer refers:—"Technical Education—a worthy field for practical philantropy, following the lead given by Sir. Wm. Macdonald in other branches. The crying need of all trades to-day is for *competent* mechanics. The Unions, whose pride it should have been to admit *only such* to full membership, have exerted their influence steadily in the opposite direction, in the persistent effort to establish an artificial uniformity both in output and wages—a glaring injustice to the *capable* mechanic as well as to the employer. All incentive to self improvement is thus taken away from the worker.

The practical abolition of the apprenticeship system and the fatal facility with which many things are learned superficially, from laying bricks to legislating for the nation, has filled the land with "half-baked" men—men trained for *nothing in particular* and good for *nothing in general.*

The practical solution is for Employers to revert to the former well-tested system of "articled apprenticeship", and to take a personal interest in training the young men so bound, making this youthful period of life attractive by encouraging friendly competition in technical schools."

EMPLOYMENT OF UNION LABOR.

At a meeting of the Montreal Catholic School Board, held on May 30th, a request was considered from the Montreal Trades and Labor Council asking that only union men be employed henceforth in the various works of construction required by the board. After a brief discussion, it was proposed that the re

quest be granted, but the motion was lost, and the matter was referred to a committee.

The following letter, from the Builders' Exchange, is written in reply to this action of the Board :

11th June, 1906.

PAUL G. MARTINEAU, Esq.,
Chairman Catholic School Commissioners.

DEAR SIR,—I note by the public press of the 31st May that at the last meeting of your Board a request was made by the Montreal Trades and Labor Council, and supported by Commissioner Alderman Gallery, that henceforth only Union men be employed in the various works of construction required by your Board ; and that such request was ultimately referred to a sub-committee.

At the request of the Board of Directors of the Builders' Exchange I am instructed to enter a formal protest against any such action on the part of your honorable Board.

This Exchange comprises the leading contractors in the building trades of Montreal, with an equally large representative membership of French, Irish and English-Canadian contractors, large employers of labor, and also large contributors both individually and collectively to the rates and assessments of this City.

As ratepayers and voters, who have at least as much right to the consideration of your honorable Body as the voters who presented the above unreasonable request to you, representing as they do only a *section* of the workers of Montreal, I beg to respectfully submit :—

1. An emphatic protest against any effort to drag our public bodies down to the level of "electioneering campaign" tactics.

2. The question as to by what right the Labor Unions claim any *monopoly* of Labor? The Unions do not comprise even 50% of the workers ; are the larger half of the working-men to be deprived of the right to earn their daily bread at the dictation of certain labor "bosses," who in most cases are not even Canadian citizens, but merely puppets worked by the wire-pullers from the United States?

3. That the policy of this Exchange is to protect the rights of *all* workers from despotic control, irrespective of its connection with unions or other labor-organizations.

4. If it is the unquestioned right of the worker to sell his labor at the best price he can obtain ; to work or to quit work at his option ; to buy or refuse to buy where he will ; then it is equally the right of the employer to employ whom he will, according to merit and ability, irrespective of connection with unions ; or to refuse to buy the labor of certain persons or organizations if undesirable.

5. The right to work belongs equally to the non-union man He, too, must live and support his family. Shall bread be taken out of his mouth, shall he be eaten or killed (and this is no idle piece of imagination) because he does not see things even as others, and refuses to join a union?

My Board therefore appeals to you with confidence as an influential public body, directing the educational affairs of the large majority of our fellow-citizens, to fearlessly assert the unalterable principle of justice to all workers alike—ignoring the distinction of "union" or "non-union" labor ; and also on behalf of the members at large of this Exchange desires to protest against unnecessary and excessive expenditure of school-taxes in payment of an artificial rate of wages imposed by a would-be monopoly of Trades-unions.

I am directed to ask you to kindly consider the subject of this letter at your next meeting, which I understand takes place on Tuesday 12th inst., and to let me hear from you at your earliest convenience.

I beg to remain, Sir,
Your obedient servant,
J. H. LAUER,
Secretary.

ADVENT OF THE PORCELAIN ENAMELED WATER CLOSET TANK.

As the old fashioned wood rim bath tub and the unsanitary wood encased lavatory have been forced to give way to the beautiful porcelain enameled roll rim bath and the open, one piece lavatory, so the wooden closet tank is being supplanted by the handsome, sanitary and serviceable porcelain enameled tank. Except in the case of very cheap work, the indications are that the wood tank will shortly be seen no more, the enameled tank having been demonstrated to be so greatly superior to it in every way.

We have come to recognize sanitation as one of the most important elements of civilization, and are beginning to understand that articles made of wood have no place in the bath or toliet room. Dampness will crack the wood, and too much heat has a likewise injurious effect. It is therefore very evident that vitreous, glazed materials, such as porcelain enamel, are in every way superior to fixtures which have about them any parts of wood, marble or other porous substance. That the porcelain enomeled tank is destined to become as popular and universal as the porcelain enameled bath tub goes without saying, therefore. The public takes more interest in matters pertaining to the bath, health and cleanliness than heretofore, and along with this interest, more attention is bestowed upon the particular devices and equipment of bath and toilet rooms. We are made aware of facts

and fundamentals relating to hygiene of which we formerly never dreamed. We realize as never before how plumbing and sanitation has advanced. We appreciate the dainty, immaculate bathroom with its walls and floor of tile, its bath of pure white enamel, the dainty one-piece enameled lavatory. and the porcelain enameled closet which has proven to be such an important step forward in modern sanitary appliances. We therefore welcome with thorough appreciation, the advent of the enameled closet tank, knowing that it adds to the health, cleanliness and beauty of the bath and toilet room.

The advantages of the porcelain enameled tank over wood tank are so numerous and evident that it scarcely would appear necessary to call attention to them. A few important points may be cited, however, inasmuch as the subject is one of marked importance in sanitation.

The wood tank, as everyone knows, is very easily scratched, marked or defaced, the surface being polished or varnished, and the polish will rub in cleaning. Moreover, the tank is made in several parts. The linings in wood tanks in most cases are of 8 or 10 oz. copper, through which the water will in time eat its way. When this occurs the wood is destroyed, the water leaking through the seams, destroying the polish and running over the floor of the bathroom.

The great advantage of the enameled tank is that it is made in one solid piece (the top of course being separate), and is enameled both inside and out, making it an ideal fixture for the service to which it is put, as it becomes, as it were, a porcelain water vessel, and does not sweat, crack nor craze, is not affected by heat or cold, has no lining to weaken and break away creating leaks and can be readily cleaned both inside and out. The beautiful design and finish of the porcelain enameled tank make it a most attractive article. In short, the advantages of the enameled tank are the advantages of the china water vessel over one of wood and copper.

The Standard Sanitary Mfg. Co., Pittsburgh, Pa., has designed and placed on the market several different styles of porcelain enameled tanks for low down closets. The tanks are made in various attractive designs, and can be furnished for syphon jet, syphonic or washdown closets.

In the matter of cost the enameled tank is slightly higher than the wood tank, which is of course to be expected, as the former is coated both inside and out with a heavy body of porcelain enamel, and in its construction only the very best materials are used. Moreover. the life of the wood tank is short, while the enameled tank will in the ordinary course of events, last a lifetime. There is really nothing to affect it, owing to its being impervious to heat and cold, no linings to rust out, etc. the durability of porcelain enamel being well known.

LOW SUMMER TOURIST RATES WEST.

During the entire summer the Chicago and North Western Railway will have in effect very low round trip tourist rates to Colorado, Utah, California, Oregon, Washington and British Columbia points. Choice of routes going and returning with favorable stop-overs and time limits. Very low excursion rates to the Pacific Coast from June 25th to July 7th. For further particulars, illustrated folders etc., write or or call on B. H. Bennett, General Agent, 2 East King Street, Toronto, Ont.

PUBLICATIONS.

The Gutta Percha & Rubber Manufacturing Company, Toronto, have issued a very attractive catalogue devoted to "Maltese Cross" interlocking rubber tiling. On page 14, 15 and 16 are reproductions of photographs taken in the rotunda and main hallways of the Queen's Hotel, Toronto, where 4,000 square feet of rubber tiling was laid, the colors chosen being red male tiles and white female tiles. The various color effects in which the tiling is made are reproduced in the catalogue, which possesses many features of interest to architects and owners. The Gutta Percha & Rubber Manufacturing Company's "Maltese Cross" rubber tiling is made of a special composition of rubber vulcanized to a certain degree of firmness, just sufficient to give slightly to the pressure of the foot. It is made in two shapes and a variety of colors.

NOTES.

The Ontario Gazette of June 23rd announces the incorporation of the Central Ontario Granite and Marble Company, Limited. The company is capitalized at $300,000. Their chief place of business will be Trenton, Ont., and the provisional directors Messrs. Charles E. Ritchie, Henry J. Wright and William Gilchrist.

A charter of incorporation has been granted to the W. E. Dillon Company, Limited, to manufacture and sell metal and sheet metal goods, ventilating, heating and fire proofing apparatus and appliances, and all kinds of roofing, siding, ceiling and wall coverings. The capital of the company is to be $40,000, and the head office Toronto. The provisional directors of the company are Messrs. William E. Dillon, Daniel Batiste and Thomas Frampton.

PERSONAL.

Mr. William Bruce, architect, is a new arrival in Winnipeg, and is making arrangements to begin business in that city. Mr. Bruce has for some years past been practising in England.

Mr. Alcide Chausse, of Montreal, President of the Association of Architects of the Province of Quebec, is representing the Association at the International Congress of Architects, held in London, England, this month.

Messrs. Darling & Pearson, architects, who have offices at Toronto and Winnipeg, are opening up an office in Regina at the corner of Eleventh and Cornwall streets. Mr. J. H. Puntin will have charge of the new office.

Mr. F. B. McNamee, of Montreal, Que., a well known contractor connected with many important Public Works contracts from the Atlantic to the Pacific, died in that city, June 20th. He was born in County Connaught, Ireland, on October 17, 1828, coming to Canada when only three weeks old.

Mr. D. Campbell, who recently resigned his situation as foreman in the bridge and building department of the C.P.R. at Fort William, Ont., after nine years' service, was presented with an address, accompanied by a quarter-cut oak secretary and bookcase, on the occasion of his retirement from the position.

The Ontario Government has granted letters of incorporation to the Great Lakes Portland Cement Company, Limited, which is capitalized at one million dollars, and its head office Toronto. The provisional directors of the company are Messrs. Roger O. Miller, Ernest P. Seon, John H. Whitehead, Horace B. Johnson and Thomas Gibson. The site of the industry will be at Reeb's quarries, about two miles west of Port Colborne, Ont. The company expect to turn out at first 1500 bbls. a day, and 2500 bbls. will be the maximum daily output, and it will be the largest cement industry in Canada.

ALBERTA ARCHITECTS.

An organization of Alberta architects has recently been completed with the following officers: President, Mr. F. Deggendorfir, Edmonton; 1st vice-president, Mr. J. Llewellyn Wilson, Calgary; 2nd vice-president, Mr. James A. Macdonald, Lethbridge; council, Messrs. H. D. Johnson, Edmonton; E. C. Hopkins, Edmonton; Gilbert Hodgson, Calgary; W. S. Williams, Medicine Hat; James E. Wise, Edmonton; R. G. Gordon, Calgary.

NOTES.

The Renfrew Brick and Tile Manufacturing Company, Limited, has been incorporated to take over the business of Thomas Henderson, brick and tile manufacturer, of Renfrew, Ont., and to continue the operation of that business. The town of Renfrew will be headquarters for the company and the capital $20,000. The directors are Messrs. Thomas Henderson, James E. H. Barnet, Allan Francis, P. S. Stewart and Robert Leitch.

NOTES.

A recent report states that the Simpson Brick Company, Toronto, have bought out the Aberdeen Brick Company, of Hamilton, and intend io put in new machinery and increase the capacity from 7,000,000 to 12,000,000 brick a year, the greater portion of the output to be shipped to Toronto. The Aberdeen Brick Company was organized several years ago, the principal shareholders being Messrs. J. J. Scott, K. C., B. A. Kennedy, of the International Harvester Company, and Anderson Fowler, since deceased.

Over 1,000 delegates were in attendance at the twenty-fourth annual convention of the National Association of Master Plumbers, held in Atlantic City, N. J., dnring the latter part of June.

NOTES.

The Portland Cast Stone Company, Limited, is the name of a concern recently incorporated by the Ontario Legislature. Guelph will be the head quarters of the company and its capital stock $40,000. The provisional directors are Messrs. William E. Colwill, Thomas J. Colwill and William W. Colwill.

Letters Patent have b en issued incorporating Messrs. Charles A. Phillips, James Calder, George G. Gladman and John P. Weeks as The Composite Brick Company of Parry Sound, Limited. The Company have acquired a portion of the Bryson property on Church street, Parry Sound, Ont., and have their plant already installed.

The incorporation of the Welland Concrete Company, with a capital of $20,000, is gazetted. A sandpit 19 acres in extent on the Ridgeville branch of the T. H. & B. Railway, has been purchased. The works of the company will be located there and concrete brick will be manufactured. A brick machine capable of making 40,000 brick per day will be installed.

A charter has been granted to the Portland Cast Stone Co., Ltd., Guelph, to manufacture all descriptions of manufactured stone. The authorized capital of the company is $40,000. This company have taken over the business of the Guelph Dominion Concrete Construction Co. They will also operate the business of the Fibre Asphalt Co., Guelph. The directors are Messrs. W. W. P. Colwill, W. Frye Colwill and T. J. Colwill, all of Guelph.

The Brampton Pressed Brick Co., Ltd., Brampton, Ont., have now got two of their kilns completed and have booked some large orders which will keep them busy till the Fall. The property on which the plant has been erected consists of 17 acres of red shale suitable for making the finest pressed brick, terra cotta, paving brick, sewer pipe, etc. The red shale comes near the surface of the ground. The depth is not known, but it has been found to be of the same quality 40 feet below the surface. The company have installed a four mould Boyd Brick Press and will duplicate this within a short time. The plant is situated about a mile from the town of Brampton. A C.P.R. siding into the works supplies them with the requisite facilities for transportation. The brick they are turning out is of a high class and the company have every prospect of success.

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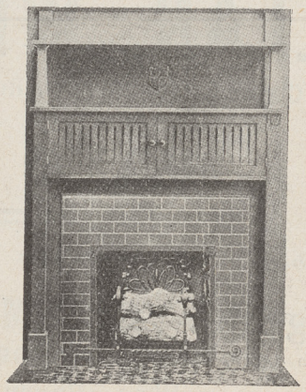

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